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*March 17, 2005*

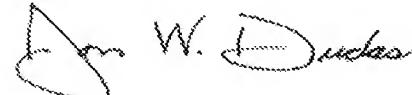
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APPLICATION NUMBER: 60/551,077

FILING DATE: *March 08, 2004*

RELATED PCT APPLICATION NUMBER: PCT/US05/06854

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**PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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7858 U.S. PTO 6/05/077

30804

13146 U.S. PTO  
030804**INVENTOR(S)**

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
AKHTAR	HASEEB	GARLAND, TX, USA

Additional inventors are being named on the separately numbered sheets attached hereto

**TITLE OF THE INVENTION (500 characters max)****RESOURCE RESERVATION TO MINIMIZE CALL SETUP DELAY FOR PTT**

Direct all correspondence to: CORRESPONDENCE ADDRESS



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**ENCLOSED APPLICATION PARTS (check all that apply)**

Specification Number of Pages 8

Drawing(s) Number of Sheets \_\_\_\_\_

Application Data Sheet. See 37 CFR 1.76

CD(s), Number \_\_\_\_\_

Other (specify) \_\_\_\_\_

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Applicant claims small entity status. See 37 CFR 1.27.

A check or money order is enclosed to cover the filing fees.

The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 50-0210

Payment by credit card. Form PTO-2038 is attached.

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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

No.

Yes, the name of the U.S. Government agency and the Government contract number are: \_\_\_\_\_

[Page 1 of 2]

Respectfully submitted

SIGNATURE

TYPED or PRINTED NAME JOHN D. CRANE

TELEPHONE 972-985-8442

Date MARCH 8, 2004

REGISTRATION NO. 25,231

(if appropriate)

Docket Number. 16853RRUS01P

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**Provisional Patent Application**

**Title:**

**Resource Reservation to Minimize  
Call Setup Delay for PTT**

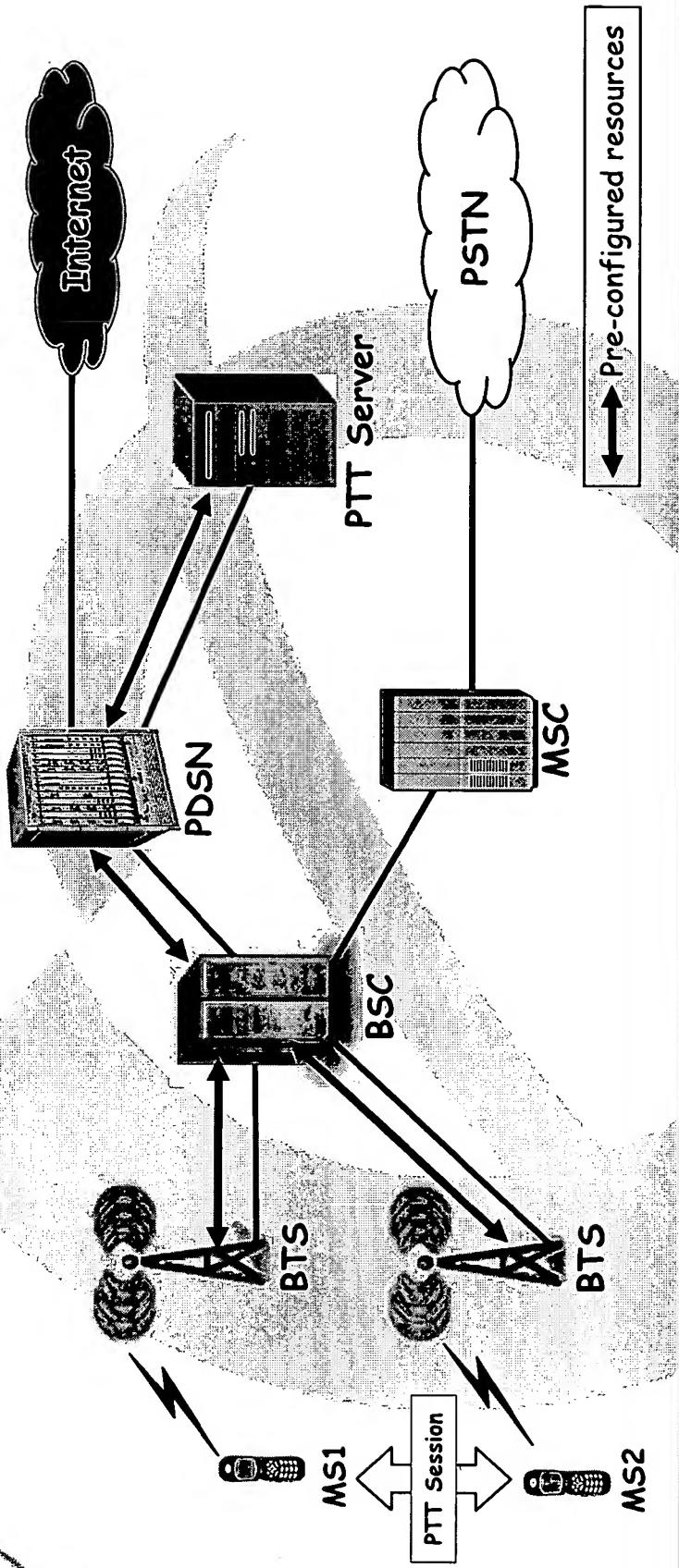
**Inventors:**

**Haseeb Akhtar, Garland, TX, USA**

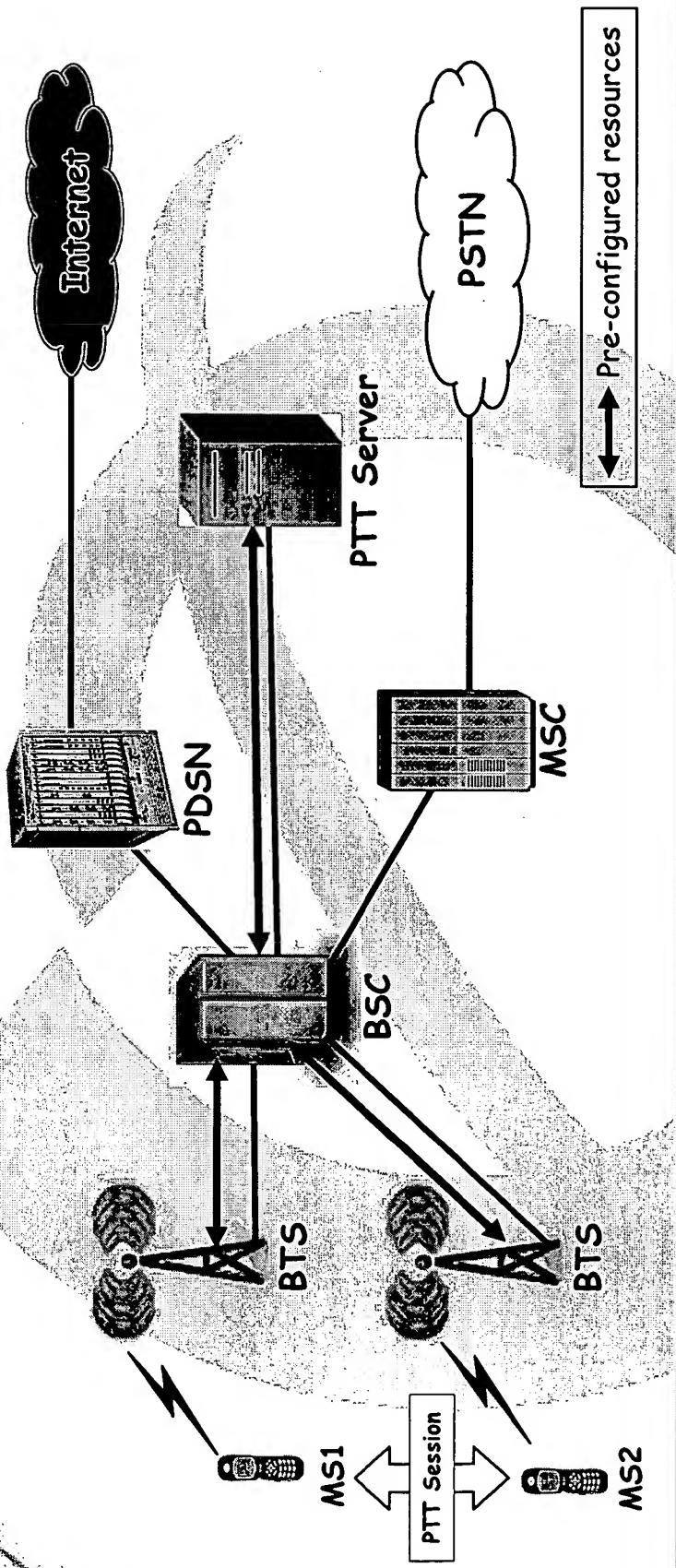
# Overview

- Call setup time is an important quality metric for PTT (Push To Talk) application
- Call setup time can be substantially reduced by reserving resources for PTT users a-priori
  - Both access and core networks are impacted
- The BSC (Base Station Controller) routes the PTT calls through the pre-provisioned channels as soon as the user is identified
  - The access network must be able to identify the PTT users
- Signaling (such as SIP) and bearer (VoIP packets) traffics are routed through the dedicated channels
- BSC, PDSN and PTT Server may be connected through a managed IP network
  - Packets can be routed through dedicated IP routes with highest QoS
  - Packets can also be routed through dedicated Ethernet (10xBT) interface
- BTS, BSC and MSC may be connected through T1/E1 trunks

# Dedicated Resources for PTT – Example 1



## Dedicated Resources for PTT – Example 2

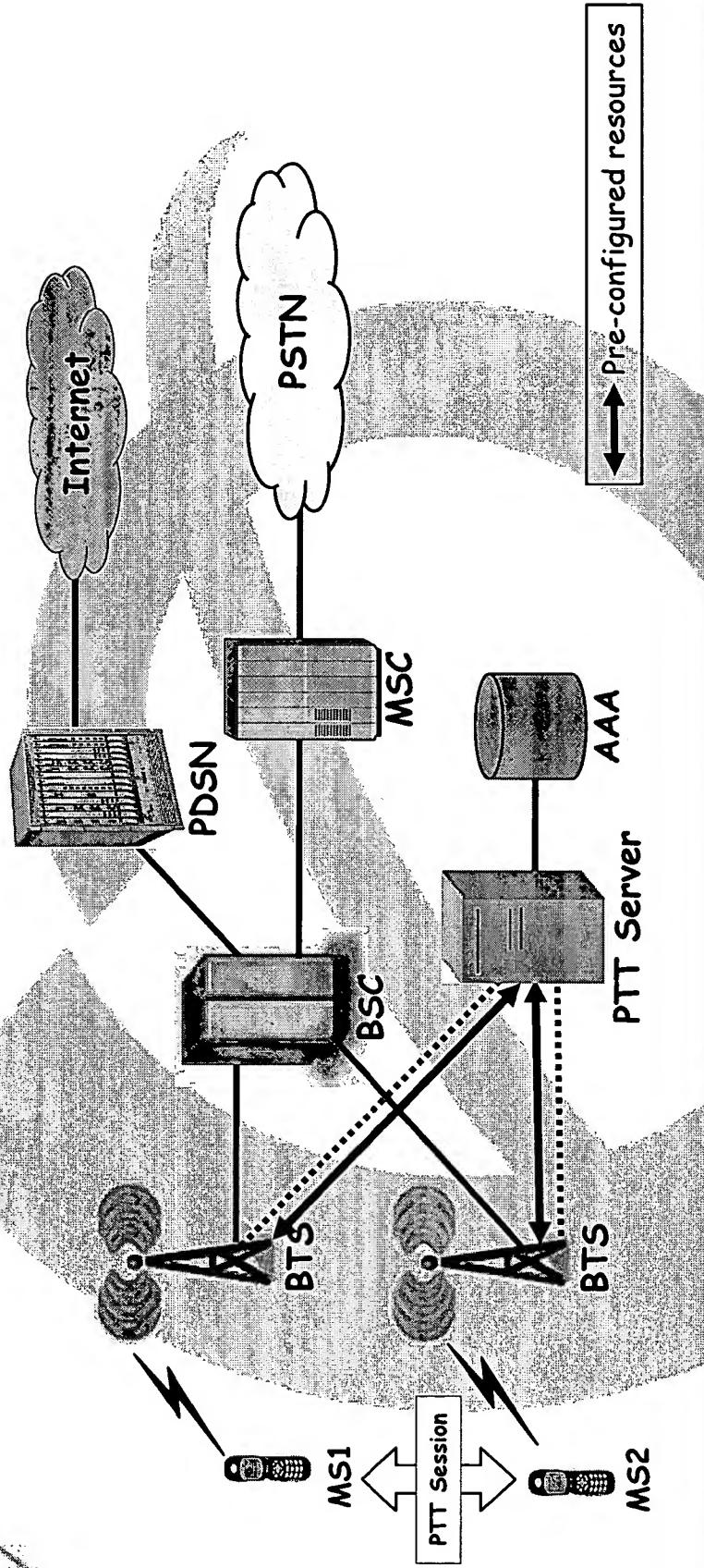


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## Dedicated Resources for PTT – Example 3



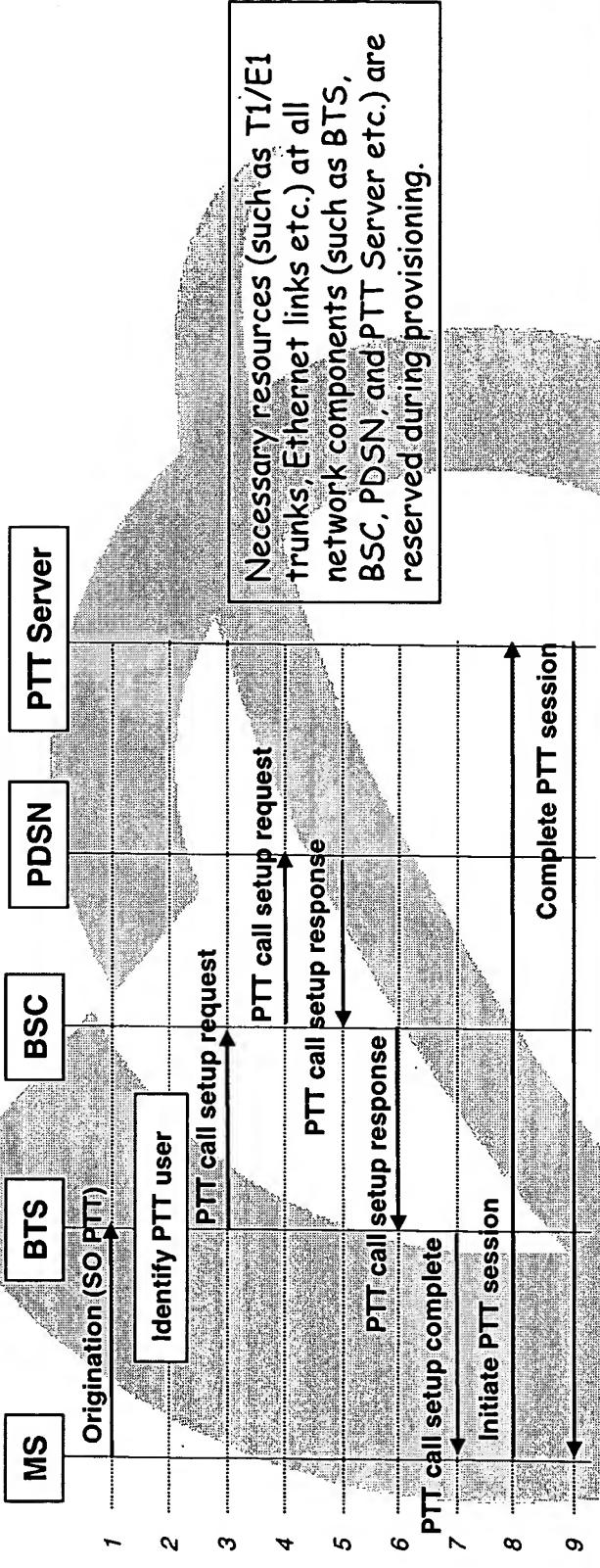
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# An Example of High Level Message Flow



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MS

BTS

Origination (SO PTT)

PDSN

BSC

PTT Server

Identify PTT user

PTT call setup request

PTT call setup response

PTT call setup complete

Initiate PTT session

Complete PTT session

Necessary resources (such as T1/E1 trunks, Ethernet links etc.) at all network components (such as BTS, BSC, PDSN, and PTT Server etc.) are reserved during provisioning.

# Conclusions

- Reserving resources at the major nodes of the wireless access networks (such as BTS, BSC, PDSN, PTT Server etc.) can significantly minimize the call setup time for specific packet-based applications (such as PTT)
- Resources must be reserved while the provisioning of the network (and not during the call set up time).
- The access network must be able to identify the users that are requesting a session for specific packet-based applications (such as PTT).
- The nodes in the access network (such as BTS, BSC etc.) may store enough information (user profile) to identify the users who are requesting a session for specific packet-based applications (such as PTT).
- The identification of the application being requested may be stored in the other databases in the network (such as HLR, AAA etc.).

- **Claims:**

- 1. A Push-to-Talk (PTT) packet based CDMA wireless telecommunications system comprising, in combination:
  - a plurality of network nodes configured to process and route packet based voice calls; dedicated interconnection links between the network nodes utilized solely in supporting PTT calls so that interconnection links do not need to be established at call setup time for a PTT call thereby improving call setup time for PTT calls.
- 2. The system of Claim 1 wherein the network nodes retain control information with respect of PTT users to further speed call setup when a previously supported PTT user re-accesses the network.